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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/008,425

11/13/2001

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09/02/2005

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EXAMINER

ROBERTS, BRIAN S

ART UNIT

PAPER NUMBER

2662

DATE MAILED: 09/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/008,425	<b>Applicant(s)</b> CHIUSSI ET AL.	
	<b>Examiner</b> Brian Roberts	<b>Art Unit</b> 2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Claims 1-16 have been examined.

#### ***Drawings***

1. The drawings are objected to because they are informal. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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3. Claim 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- In reference to claim 1 and 16

The term "sufficient" in claim 1 is a relative term which renders the claim indefinite. The term "sufficient" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

- In reference to claim 15

Claim 15 recites the limitation "the global frame counter FRMCNT". There is insufficient antecedent basis for this limitation in the claim.

- In reference to claims 2-14

Claims 2-14 are rejected because they depend on claim 1.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. Claims 1, 2, 5, 12-14, and 16, as best understood, are rejected under 35 U.S.C. 102(e) as being anticipated by Baker et al. (US 6775231)

- In reference to claim 1 and 16

In Figure 3, Baker et al. teaches a dynamic weighted resource sharing system and method that includes:

- A weight determination block (306) that periodically determines the weights (duration of the service frame) for each service class
- A scheduler (310) using an algorithm to guarantee that each data packet inputs (data packet flow) always receives at least its allocated service share if it remains backlogged over a sufficient number of consecutive service frames and a classifier (302) that checks a special Differentiated Services field of each packet header and are separated by Assured Forwarding class (bundle) where each class receives at least its allocated service share if there is always at least one data packet flow in the bundle that remains continuously backlogged for the whole duration of a the allocated service time
- A weight determination block (306) that maintains for each class (bundle), resources allocated by weight (cumulative share) that relates the sum of the relates to the sum of the weights (service shares) allocated to respective one of the data packet inputs (data packet flows) that are grouped together in the same class (bundle)
- A weight determination block (306) that computes for each class (bundle), a weight allocated to the class

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- A weight determination block (306) that periodically determines a new weight for each class based upon the traffic load of the class

- In reference to claim 2

Baker et al. further teaches using a Weighted Round-Robin algorithm for scheduling. (column 5 line 30-32)

- In reference to claim 5

Baker et al. further teaches a system where the weights (duration of the service frames) assigned to the classes are variable. (abstract)

- In reference to claim 12

In Figures 4 and 5, Baker et al. teaches that the weight (cumulative share) assigned to the class (bundle) is determined based upon the traffic load of the class.

- In reference to claim 13 and 14

In Figure 4, Baker et al. further teaches measuring the packet arrival rate for each class (402), determining the weight assigned to each of the classes (404), and allocating the resources to each class according to the weights (406).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3 and 4, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Baker et al. (US 6775231) in view of the admitted prior art.

- In reference to claim 3 and 4

Baker et al. teaches a system that covers substantially all limitations of the parent claim

Baker et al. does not teach using a Deficit Round Robin algorithm or a Surplus Round Robin algorithm for scheduling.

The admitted prior teaches using a Deficit Round Robin and a Surplus Round Robin algorithm for scheduling.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the system and method of Baker et al. to include using a Deficit Round Robin or Surplus Round Robin algorithm as taught by the admitted prior art because they provide robust bandwidth guarantees with minimal complexity.

8. Claim 6, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Baker et al. (US 6775231)

- In reference to claim 6

Baker et al. teaches a system that covers substantially all limitations of the parent claim.

Baker et al. does not teach a system where the weights (duration of the service frame) assigned to the classes are fixed.

Baker et al. teaches dividing traffic among multiple queues and allocating limited packet forwarding bandwidth among the queues according to weights assigned to each queue. (column 1 lines 54-60)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the system and method of Baker et al. to include assigning a fixed weight to each queue in order to simplify the system and assure that each class receives a specific allocation of resources.

### ***Allowable Subject Matter***

- In reference to claims 7-11

Claims 7-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior record fails to teach or fairly suggest a system where a global frame counter, a start flag for each bundle of the plurality of bundles, and a frame flag for each data packet flow of the plurality of data packet flows is used to determine the duration of a service frame or the allocation of resources to a plurality of classes.



- In reference to claim 15

Claim 15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. The prior record fails to teach or fairly suggest the first service to the first data packet flow of bundle is detected when the start flag of the bundle that includes the next flow to be processed has a different value than the global frame counter.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Yin et al. (US 6018527) teaches queue service interval based cell scheduler with hierarchical queuing configurations.
- Bonomi et al. (US 6396834) teaches a flexible scheduler in an ATM switch.
- Kalkunte et al. (US 6470016) teaches an adaptive WRR scheduler and servicing output queues dynamically according to bandwidth allocation in a frame environment.
- Pei et al. (US 6272109) teaches a hierarchical scheduler for different ATM traffic
- Chow et al. (US 6438134) teaches a two-component bandwidth scheduler.


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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Roberts whose telephone number is (571) 272-3095. The examiner can normally be reached on M-F 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BSR  
08/24/2005

  
**JOHN PEZZLO**  
**PRIMARY EXAMINER**